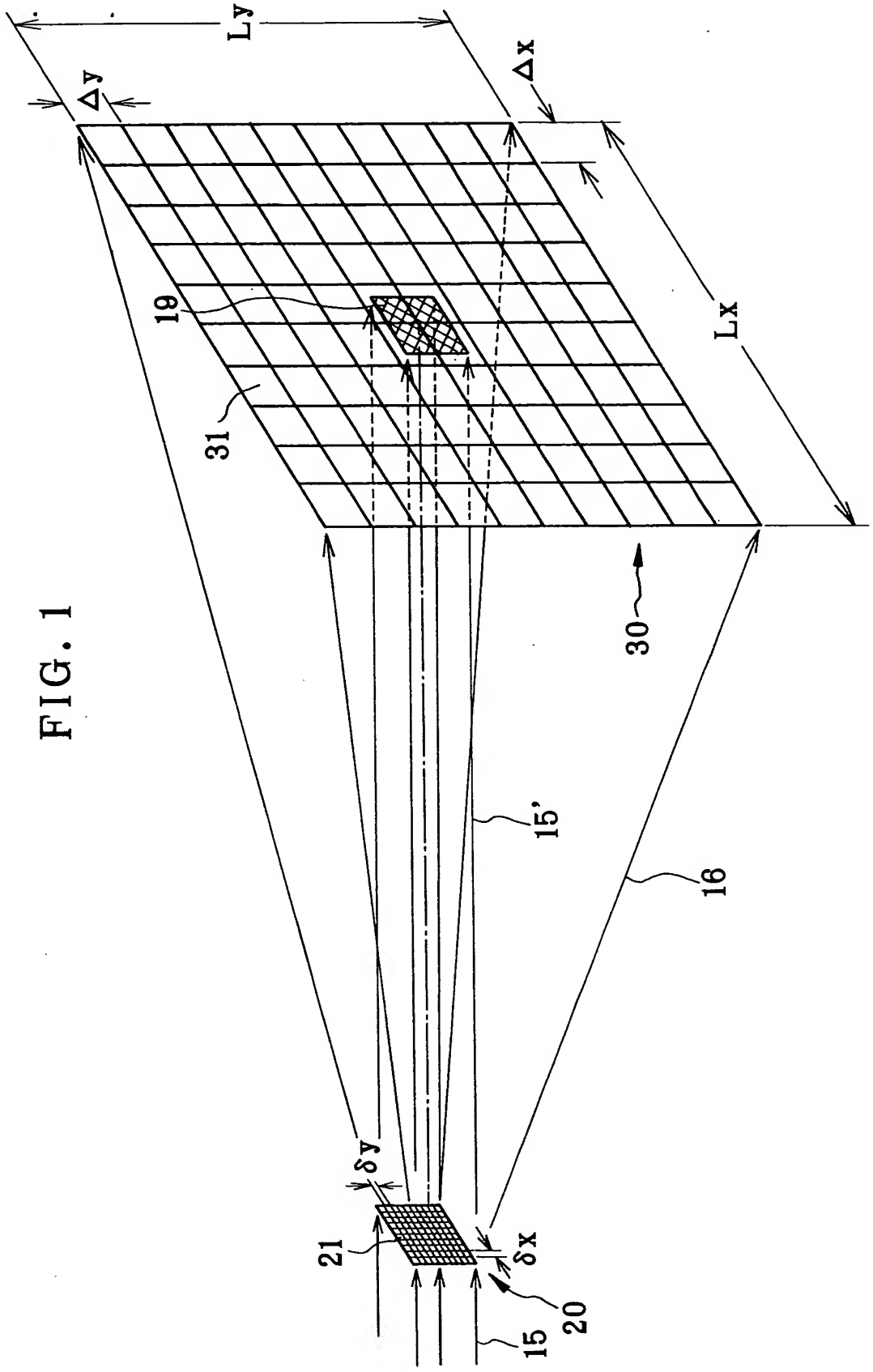

FIG. 1

FIG. 2

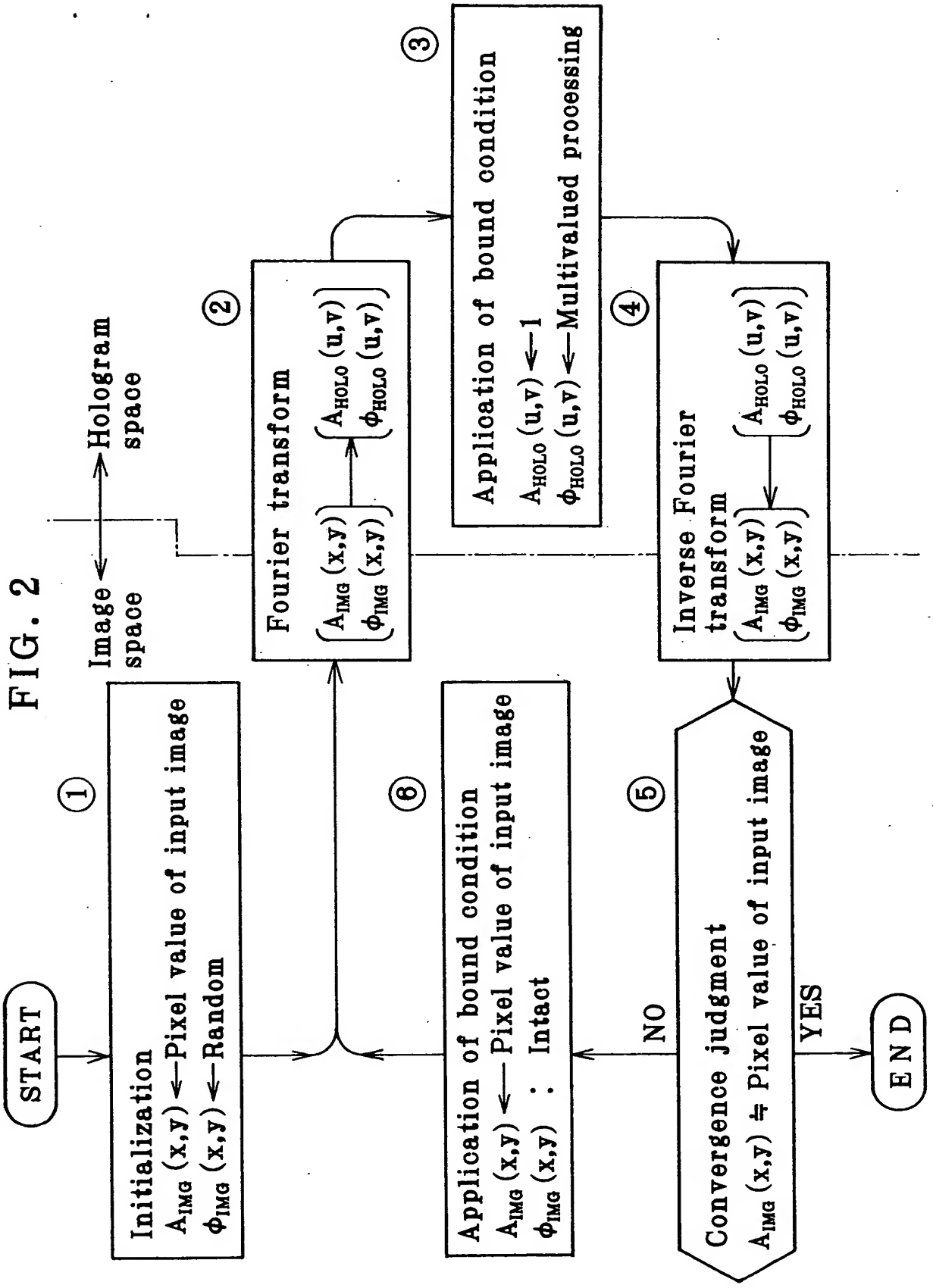
START
① Initialization
$A_{IMG}(x,y) \leftarrow$ Pixel value of input image
$\phi_{IMG}(x,y) \leftarrow$ Random
Image space
Hologram space
② Fourier transform
$\begin{pmatrix} A_{IMG}(x,y) \\ \phi_{IMG}(x,y) \end{pmatrix}$ → $\begin{pmatrix} A_{HOLO}(u,v) \\ \phi_{HOLO}(u,v) \end{pmatrix}$
③ Application of bound condition
$A_{HOLO}(u,v) \leftarrow 1$
$\phi_{HOLO}(u,v) \leftarrow$ Multivalued processing
④ Inverse Fourier transform
$\begin{pmatrix} A_{IMG}(x,y) \\ \phi_{IMG}(x,y) \end{pmatrix}$ ← $\begin{pmatrix} A_{HOLO}(u,v) \\ \phi_{HOLO}(u,v) \end{pmatrix}$
⑤ Convergence judgment
$A_{IMG}(x,y) \fallingdotseq$ Pixel value of input image
YES
NO
⑥ Application of bound condition
$A_{IMG}(x,y) \leftarrow$ Pixel value of input image
$\phi_{IMG}(x,y)$: Intact
END

FIG. 3

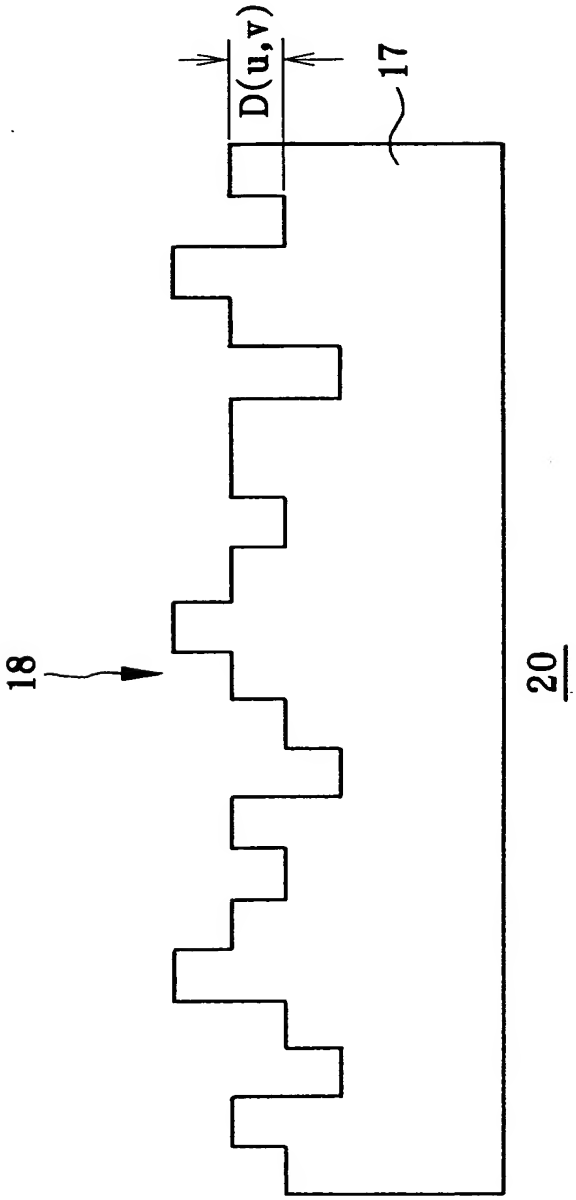

FIG. 4(a)

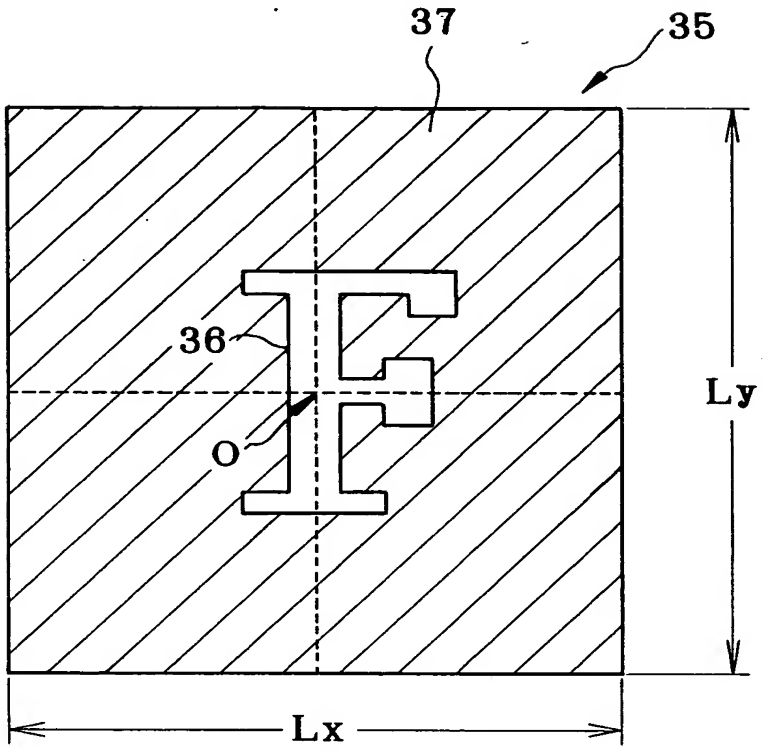

FIG. 4(b)

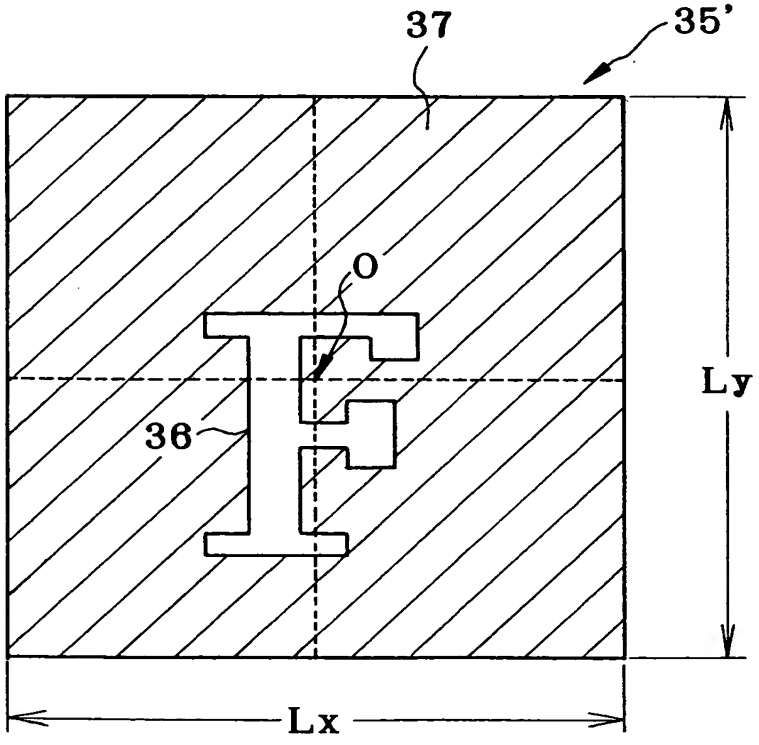

FIG. 5(a)

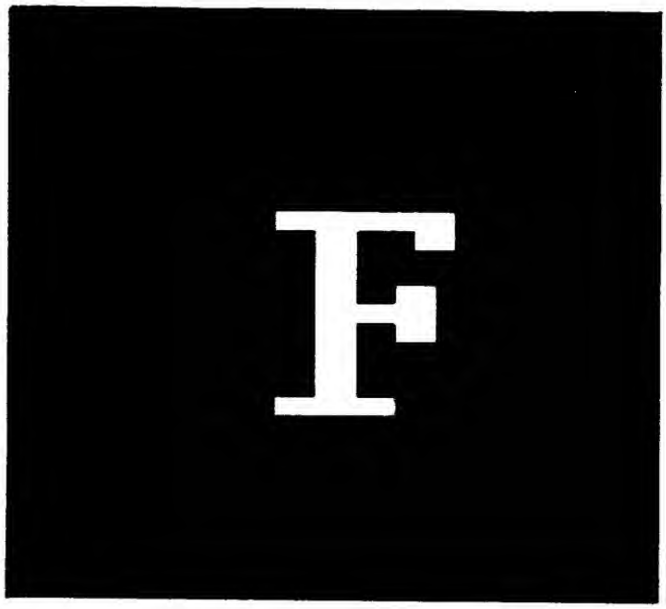

FIG. 5(b)

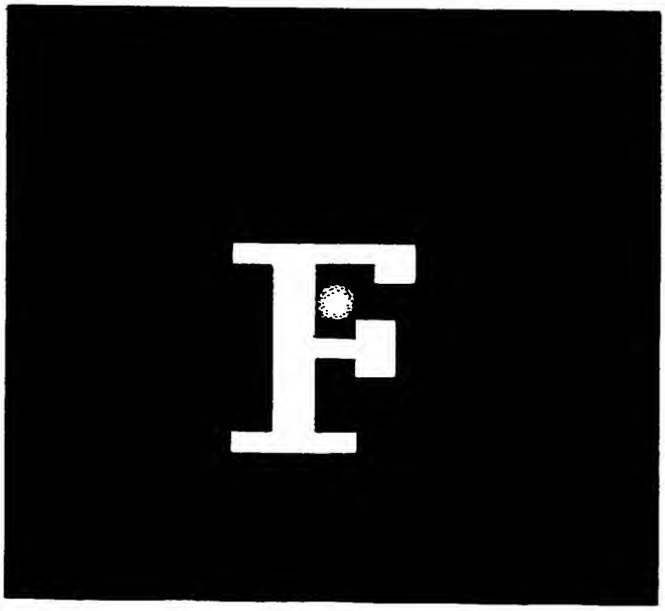

FIG. 6(a)

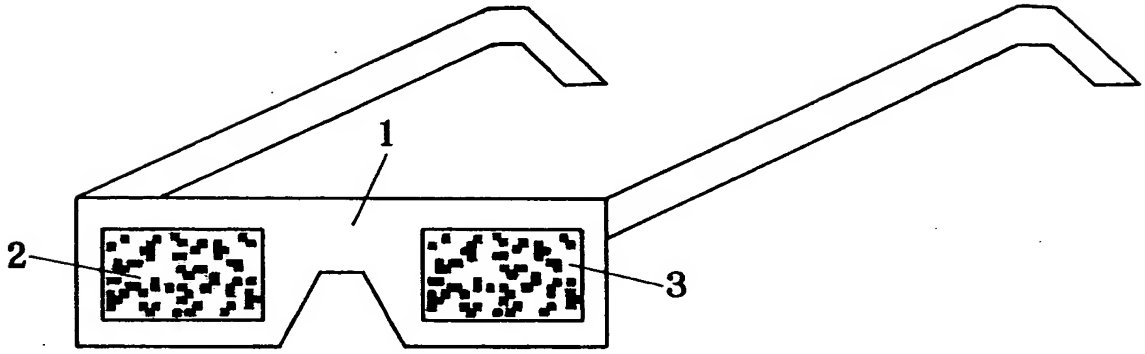

FIG. 6(b)

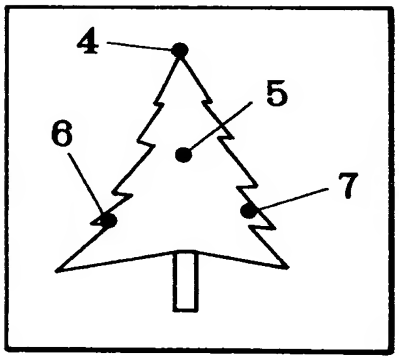
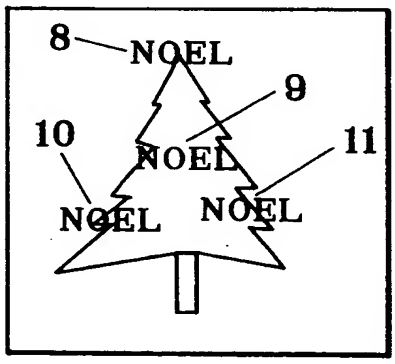
FIG. 6(c)